



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/669,425	09/24/2003	Ashok N. Mathur	06328P USA	4239

23543 7590 08/03/2006

AIR PRODUCTS AND CHEMICALS, INC.
PATENT DEPARTMENT
7201 HAMILTON BOULEVARD
ALLENTOWN, PA 181951501

EXAMINER

SHAW, ELIZABETH ANNE

ART UNIT	PAPER NUMBER
----------	--------------

3644

DATE MAILED: 08/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/669,425	Applicant(s) MATHUR ET AL.	
	Examiner Elizabeth A. Shaw	Art Unit 3644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 15-18, 20, 22 and 29 is/are allowed.
- 6) ☒ Claim(s) 1-13, 24-28, 30 and 31 is/are rejected.
- 7) ☒ Claim(s) 14, 23 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 4-7, 11-14, 25 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sevic (5,893,337) in view of Shaar (5,839,391) and further in view of Nomura et al (JP 05328875). Sevic shows an aquafarming system for shrimp comprising a containment vessel or pond containing a plurality of marine animals and an aqueous medium, a sensor for measuring the content of dissolved oxygen within the aqueous medium and an ozonizer for creating ozone and for dissolving the ozone into the aqueous medium through injection, see col. 2, lines 34-52 to increase the dissolved oxygen content and to maintain the dissolved oxygen content to more than 5/mg per liter. It is considered that the ozonizer is located within the containment vessel sufficiently to inject the ozone into the medium. Also, though not shown, it is considered that a central processing unit is present and in electrical communication with the sensors, see col. 3, lines 20-28 to indicate levels of oxygen content in the containment vessel and remotely activate the ozonizer generators, the generators; though notably used prior to feeding times are capable of activation at any time of the day, see col. 3, lines 28-31. Sevic teaches that both the vacuum swing absorption generator and pressure swing generator are known and the use of either generator to provide oxygen

Art Unit: 3644

would be beneficial, see col. 3, lines 54-60. Sevic does not disclose the purity of the oxygen. Shaar discloses a system and method of use capable of providing oxygen having a purity of 60% or greater for aquafarming marine animal specifically shrimp comprising a containment vessel 30, 50 capable of containing a plurality of marine animals and an aqueous medium, at least one oxygen injector 5, 6, 6A disposed within at least one location in the containment vessel 30, 50; an oxygen generator/ozone source (pump system 2 in use with the teaching of col. 4, lines 40-47) in fluid communication with the oxygen injector 5, 6, 6A to increase the dissolved oxygen within the aqueous medium and a food source 3 in fluid communication with the oxygen injector 5, 6, 6A. The combination of Shaar and Sevic does not disclose the use of an oxygen generator. Nomura et al teaches the use of an oxygen generator for a water tank for fish.

With respect to claim 1, to use a plurality or multiples of the aquafarming system of Sevic would have been obvious to one skilled in the art in order to increase the capacity of the farm. Further, with respect to claim 1 to use the purity of oxygen as shown by Shaar with the farm of Sevic would have been obvious to one skilled in the art in order to provide the most beneficial living conditions. Further to use the oxygen generator of Nomura et al with the combination of Shaar and Sevic would have been obvious to one skilled in the art in order to supply dissolved oxygen to the water.

With respect to claims 6 and 11, to use the vacuum swing absorption generator of Sevic with the system of Shaar would have been obvious to one skilled in the art in order to achieve a greater percentage by volume of oxygen.

. With respect to claims 12 and 13, to use the timer control and sensors of Sevic with the system of Shaar would have been obvious to one skilled in the art in order to control the generators output to activate them at a time when it is most efficient and necessary, such as lower oxygen levels observed at night.

With respect to claim 25, in the range noted of between 0.25 and 8, one containment vessel with an oxygen generator present is obvious in the combination of Sevic, Shaar and Nomura et al in that the generator of Nomura et al is used in one container.

With respect to claim 30, the use of multiple containment vessels and generators to maintain the multiple vessels is considered to be a duplication of parts, further, multiple containment vessels with aerators, at least 10, which can be considered oxygen generators or oxygenators are widely used in aquarium displays in pet shops and other places.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sevic in view of Shaar and Nomura et al as applied to claim 1 above and further in view of Woltman (5,014,647). The combination Sevic, Shaar and Nomura et al do not disclose a medicine source in fluid communication with an oxygen injector. Woltman teaches an aquafarming system having a medicine source 10 in communication with oxygen injectors/aspirators, col. 2, lines 25-28. With respect to claim 3, to use a medicine source of Woltman with the system of the combination of Sevic, Shaar and Nomura et al, would have been obvious to one skilled in the art to having added a in order to assist in maintaining the health of the marine animals.

Claims 8-10 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sevic in view of Shaar and Nomura et al as applied to claim 1 above and further in view of Kajisono. The combination of Sevic, Shaar and Nomura et al do not disclose an oxygen generator being mounted on wheels or floatable support. Kajisono teaches a water purifier apparatus 40 mounted on a floatable support 11. With respect to claims 8-10 and 31, to make the oxygen generator of the combination of Sevic, Shaar and Nomura et al portable as shown by Kajisono would have been obvious to one skilled in the art in order to ensure circulation of purified, oxygenated, or other fortified water to all portions of the animal containment unit, particularly if the unit is shaped irregularly. Further it has been held that making an old device portable or movable without producing any new and unexpected result involves only routine skill in the art.

Claims 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hunt in view of Ido (6,357,392). Hunt does not disclose the exact flow rate of the aqueous medium. Ido teaches the use of pumps causing a current flow of 5 to 20 cm/sec, see col. 14, lines 1-4. With respect to claims 20 and 21 to move the aqueous medium at a flow rate of between 4 and 20 cm/sec as taught by Ido in the system of Hunt would have been obvious to one skilled in the art in order to provide enough aqueous medium movement to be closer to the conditions of the sea and to allow for full aeration, the drift of the animals and to move the waste or sludge from the general living area to the bottom.

Claims 24, 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sevic in view of Shaar and Nomura et al as applied to claim 1 above and further in

Art Unit: 3644

view of Hunt. The combination of Sevic, Shaar and Nomura et al do not disclose a circular vortex. With respect to claim 24, to use the vortex method of circulation as taught by Hunt with the system of Sevic, Shaar and Nomura et al would have been obvious to one skilled in the art in order to thoroughly mingle the water in the container to completely distribute the oxygen.

Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination Sevic, Shaar and Nomura et al as applied to claim 1 above and further in view of Ido. The combination of Sevic, Shaar and Nomura et al do not teach the rate of speed of the aqueous medium. Ido teaches the use of pumps causing a current flow of 5 to 20 cm/sec, see col. 14, lines 1-4. With respect to claim 26, to use the teaching of Ido with the system of the combination of Sevic, Shaar and Nomura et al would have been obvious to one skilled in the art in order to provide enough aqueous medium movement to be closer to the conditions of the sea and to allow for full aeration, the drift of the animals and to move the waste or sludge from the general living area to the bottom.

Allowable Subject Matter

Claims 15-18, 20, 22 and 29 are allowed.

Claims 14 and 23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Further, structure describing the split lines going from one generator to two separate tanks would be considered to be allowable.

Response to Arguments

Applicant's arguments with respect to claims 1-14, 18-28, 30 and 31 have been considered but are moot in view of the new ground(s) of rejection. With respect to Applicant's arguments of claims 1, 4-7, 11-13 and 25, the lack of at least one oxygen generator has been overcome by the reference to Nomura et al which would be more efficient in combination with Sevic and Shaar than having to buy or make the oxygen containing gas and the oxygen concentration would be an improvement to the pump of Shaar. The use of plural oxygen generators is a duplication of parts and is more efficient for a large plurality of tanks/containers. Applicant suggests that the reservoir of Sevic simply be enlarged which could solve the problem to a point until there was no more space in which to enlarge the pond/reservoir area. At that point a plurality of generators would be more space efficient. Further the use of various types of absorption generators with or without timers is well known in the fish rearing field therefore it would be obvious that if a plurality of oxygen generators were in use, one would need an accompanying number of absorption generators. With respect to the range, given that the Applicant's range starts below one and the reference to Nomura et al shows an oxygen generator for one tank/containment vessel, the range is considered to be satisfied.

With respect to the arguments of claim 3, it is well known to introduce medications to the waters of fish environments to maintain health, with the reasons above for the combination of Sevic and Shaar.

With respect to the arguments of claims 8-10, the generator of Nomura et al is portable (floating) and takes no great skill in the art to alter it to work from a different (landed) location, with the reasons above for the combination of Sevic and Shaar.

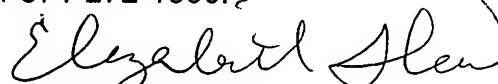
With respect to the arguments of claim 26, the range of aqueous flow is met, with the reasons above for the combination of Sevic and Shaar.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth A. Shaw whose telephone number is 571-272-6908. The examiner can normally be reached on M-Th 10:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Teri Luu can be reached on 571-272-7045. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Elizabeth A. Shaw

Application/Control Number: 10/669,425
Art Unit: 3644

Page 9

Examiner
Art Unit 3644

July 20, 2006



TERI PHAM LUU
SUPERVISORY
PRIMARY EXAMINER